

Introduction to Symposium: 'Melbourne's biodiversity – past and present', 21 November 2010

Gary Presland

Honorary Fellow, Melbourne School of Land and Environment, The University of Melbourne, Victoria 3010

Although of immense local interest and encompassing a wide diversity in itself, the subject of the 2010 FNCV Biodiversity Symposium is not one that has been well covered in previous volumes of this journal. Readers of *The Victorian Naturalist* would need to go back to issues published almost 60 years ago to find a collection of papers on the natural history of Melbourne (Anon 1942a, b; Colliver 1942; Fostick 1942; Mitchell 1942). There have been many individual papers published in this journal on a wide variety of aspects of the topic but only one such collection. The present issue is the first that is dedicated entirely to Melbourne's natural history.

In advance of the Symposium, each of the speakers was supplied with that part of *The Handbook of Melbourne* (Spencer 1900) that was relevant to their area of expertise. Their brief was to present the current state of knowledge of those areas, comparing what we know now with what was known in 1900. The result was a Symposium that had a broad appeal in both historical and natural science terms. Partly for that reason, it also was one of the most interesting Symposia held by the Club in recent years. It is anticipated that this collection of the printed papers will stand for some time as an invaluable point of reference on the subject.

Most aspects of Melbourne's natural history were addressed at the Symposium and most of the presentations are printed here. The order of presentation has been altered slightly for their publication. This has been done to take account of additional work that was done, after the presentation, on one of the papers. Andrew Hamer's paper on the herpetofauna of Melbourne is the first presented here because the author's reworking of his presentation has elevated it to the status of a Research Report. Following the usual practice for this journal, it is presented here ahead of the remaining papers, which are Contributions. The order of papers is otherwise more or less as naturalists would anticipate.

Andrew Hamer's research on Melbourne's herpetofauna looks at the distribution of species from the past and compares the data with the present situation as a way of gauging the impacts of urbanisation. The base data are drawn from both the *Handbook of Melbourne* and information published in *The Victorian Naturalist*. Not surprisingly there have been declines in reptile and frog species within the urban area between 1850 and 2006, although these were not uniform across all local herpetofauna. Currently, there is little monitoring of the ongoing effects on Melbourne's herpetofauna of urban growth.

Graeme Lorimer's paper considers the ways in which Melbourne's plant life, already diminished by 1900, has been affected by increasing threats during the past 110 years. There have been several causes of change to vegetation in the Melbourne area, including introduced flora, tree loss, fragmentation of habitat, and fire. Today many local plant species are endangered or vulnerable but continue to face threats of various kinds, particularly relating to climate change.

Tom May's overview of fungi of the Melbourne area had no point of comparison with which to begin, because the subject was not included in the *Handbook*. The author details the various data sources of Melbourne's fungi and, drawing upon the more-than-2500 collections recorded at the National Herbarium, considers the number and types of fungal species in the area of Greater Melbourne. A range of habitats in which fungi have been recorded are discussed.

Mollusca were dealt with in the *Handbook*, and Michael Lyon comments briefly on the differences in both taxonomy and collecting techniques between 1900 and today. Field research by a range of individuals and groups since publication of the *Handbook* has greatly increased the list of local molluscs. Some of

these have become economically important, which has had impacts on both their numbers and habitats. Serious threats to molluscan diversity are posed also by invasive species.

Terrestrial invertebrates were summarised well in the 1900 publication, giving Alan Yen a good starting point for an up-to-date summary of their current state in the Melbourne area. After considering the factors that influence biodiversity in invertebrate populations, the author looks at how urbanisation affects these species. Because little is known about the true extent of Melbourne's terrestrial invertebrates, planning for their future conservation focuses on essentially simple strategies such as the control of exotic pest species, revegetation of native species, and establishing corridors for natural dispersal.

Richard Loyn and Peter Menkhorst took the 1900 summary of birdlife as a benchmark, against which to present the current situation for avian species. Since the 19th century the bird fauna of Melbourne has changed greatly, owing to a number of causes. These include destruction of habitat, hunting and destruction of particular avian species and, more recently, climate change. Not all bird species have declined; there are some, such as Fan-tailed Cuckoo *Cacomantis flabelliformis*, Little Wattlebird *Anthochaera chrysoptera* and Red Wattle bird *A. curunculata* have increased in numbers within the Melbourne area.

The same pair of authors, in reverse order, also provide a survey of changes through time to mammal species in the Greater Melbourne area. Based on the analysis of available records, their contribution presents a picture of many species declining in number over the period of European settlement. Some of these had suffered prior to the publication of the *Handbook* but the impact of urbanisation has increased in more recent times. Conversely, there are some species, for example, Common Brushtail Possum, Common Ringtail Possum, Eastern Grey Kangaroo and Koala, that have increased in the suburbs or semi-rural areas of Greater Melbourne.

Although disparate in specific subject matter, all of these papers are united in at least two ways. Over and above their starting premises and their common physical setting, all of them present a picture of the extent to which things

have changed in the natural world. This is perhaps as one might expect, not only from the theme of the Symposium but also because the city of Melbourne has changed to a similar extent since 1900. There is a direct relationship between urban growth and diminution of natural habitats. Regrettably, the encroaching urban area, along with a huge increase in human activity in that area, has had significant impacts on the local plant and animal life, much of which had already diminished since European settlement.

Because this collection of papers contains summaries of changes in the natural history of Melbourne, as they relate to a range of plant and animal species, it will also provide a useful compilation of overall shifts to date in the biodiversity of the area. It will thus also be of value as a source of data in future studies that seek to document changes in the city's biological capital. With the currently-projected growth of Melbourne to a population of five million plus, it is likely these changes will be of a considerable magnitude.

This issue of *The Victorian Naturalist* will delight naturalists of all persuasions, including those with an interest in the historical aspects of their chosen discipline. As a collection focusing on the particular locale of Melbourne, it also will serve as an excellent introduction to the natural history of that city. I wish that it had been available in 2002, when I set out to write a book on the same subject (Presland 2008). That the geographic focus of this collected body of research is the area in which the majority of Victorians live gives this issue of the journal increased significance. The relevance of these papers is likely to endure for many years to come.

References

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